

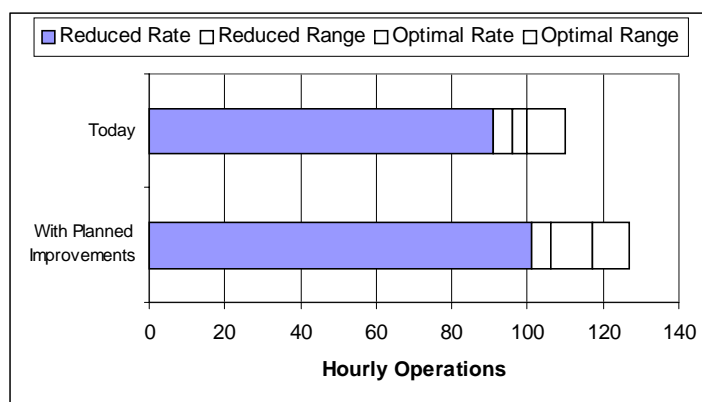
Philadelphia International Airport Benchmarks

- The current capacity benchmark at Philadelphia is 100-110 flights per hour in good weather.
- Current capacity falls to 91-96 flights (or fewer) per hour in adverse weather conditions, which may include poor visibility, unfavorable winds or heavy precipitation.
- In 2000, over 4% of all flights at Philadelphia experienced significant levels of delay (more than 15 minutes).
- In adverse weather, scheduled traffic exceeds capacity 3 1/2 hours of the day. As a result, about 14% of the flights are delayed significantly (more than 15 minutes).
- Technology and procedural improvements are expected to improve Philadelphia's capacity benchmark in good weather by 17% (to 117-127 flights per hour) over the next 10 years, while the adverse weather capacity benchmark will increase by 11% (to 101-106 flights per hour).
- These capacity increases could be brought about as a result of:
 - ADS-B/CDTI (with LAAS), which provides a cockpit display of the location of other aircraft and will help the pilot maintain the desired separation more precisely.
 - FMS/RNAV Routes, which allow a more consistent flow of aircraft to the runway.
 - LAHSO, which allows independent arrivals for specific aircraft types on intersecting runways.
 - PRM (although no effect in reduced rate configuration).
- Demand at Philadelphia is expected to grow by 23% over the next decade. This imbalance between capacity and demand growth is expected to significantly increase delays.
- These results consider the new runway 8/26 that was recently commissioned at Philadelphia. The benchmarks assume that 25% of airport traffic can use the short runways 17/35 and 8/26. If this percentage declines, the capacity of the airport will also decrease.

Airport Capacity Benchmarks – These values are for total operations achievable under specific conditions:

- **Optimum Rate** – Visual Approaches (VAPS), unlimited ceiling and visibility
- **Reduced Rate** – Most commonly used instrument configuration, below visual approach minima

Scenario	Optimum Rate	Reduced Rate
Today	100-110	91-96
New Runway	N/A	N/A
With planned improvements	117-127	101-106



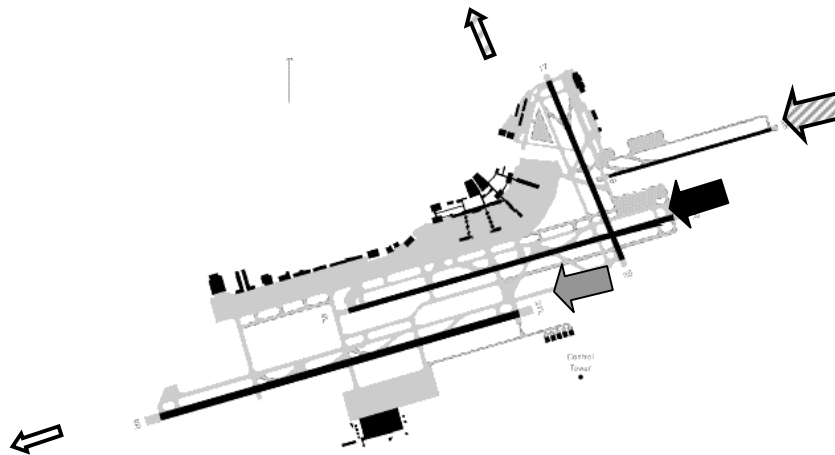
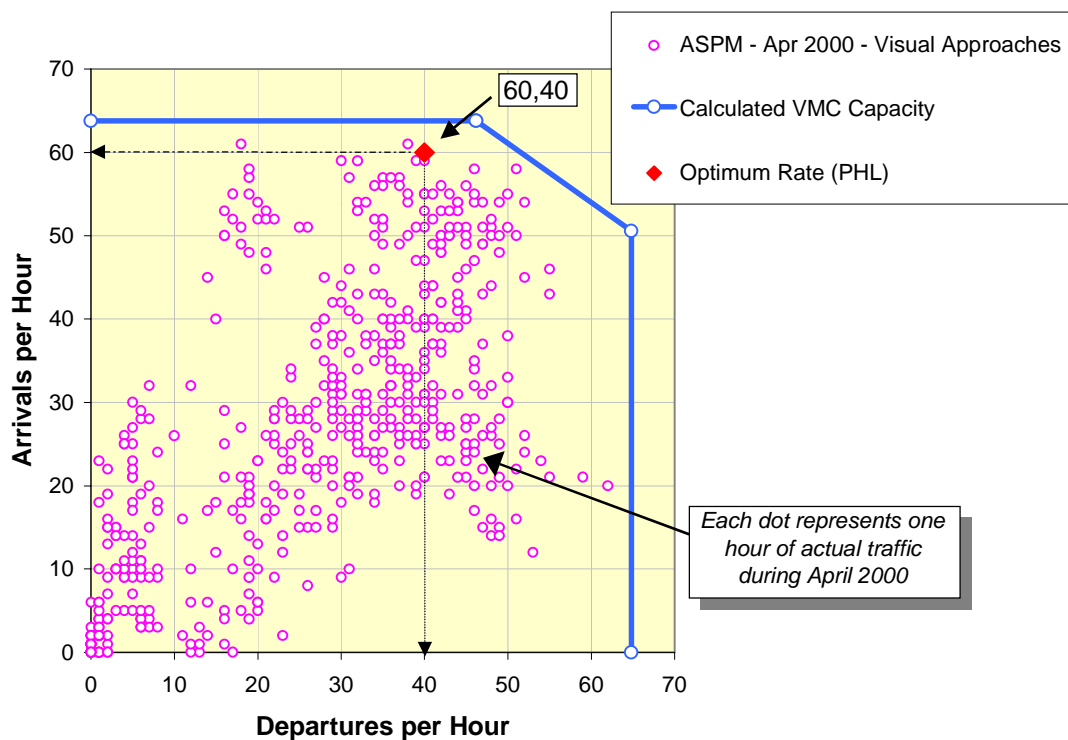
- The benchmarks describe an achievable level of performance for the given conditions, which can occasionally be exceeded. Lower rates can be expected under adverse conditions. Note: In some cases, facilities provided separate unbalanced maximum arrival and departure rates.
- Planned Improvements include:
 - ADS-B/CDTI (with LAAS) – provides a cockpit display of the location of other aircraft. This will help the pilot maintain the desired separation more precisely.
 - FMS/RNAV Routes – allows more consistent delivery of aircraft to the runway threshold.
 - LAHSO
 - PRM (although no effect in reduced rate configuration)
- Benefits from Planned Improvements assume that all required infrastructure and regulatory approvals will be in place. This includes aircraft equipage, airspace design, environmental reviews, frequencies, training, etc. as needed.
- **Note:** These benchmarks do not consider any limitation on airport traffic flow that may be caused by non-runway constraints at the airport or elsewhere in the NAS. Such constraints may include:
 - Taxiway and gate congestion, runway crossings, slot controls, construction activity
 - Terminal airspace, especially limited departure headings
 - Traffic flow restrictions caused by en route miles-in-trail restrictions, weather or congestion problems at other airports

These values were calculated for the Capacity Benchmarking task and should not be used for other purposes, particularly if more detailed analyses have been performed for the individual programs.

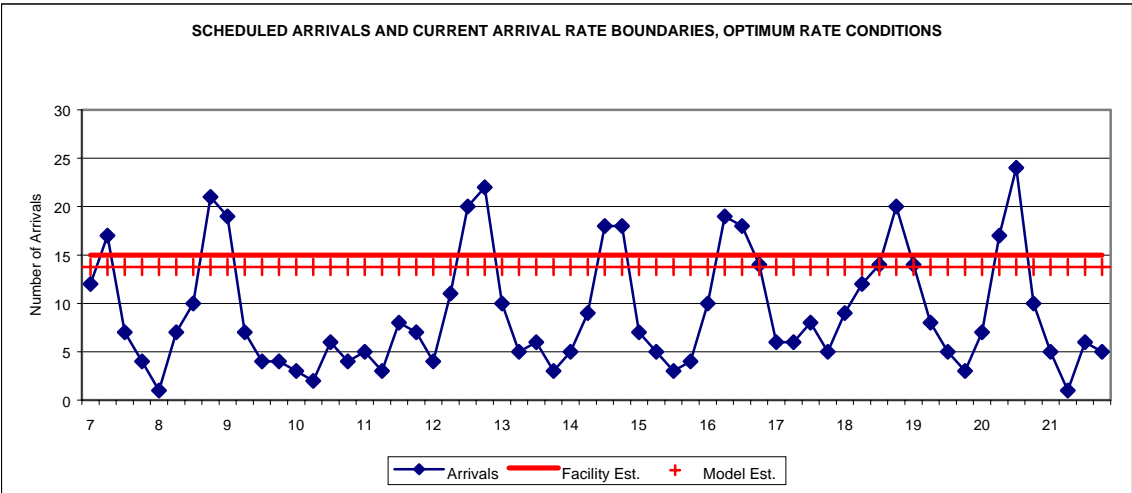
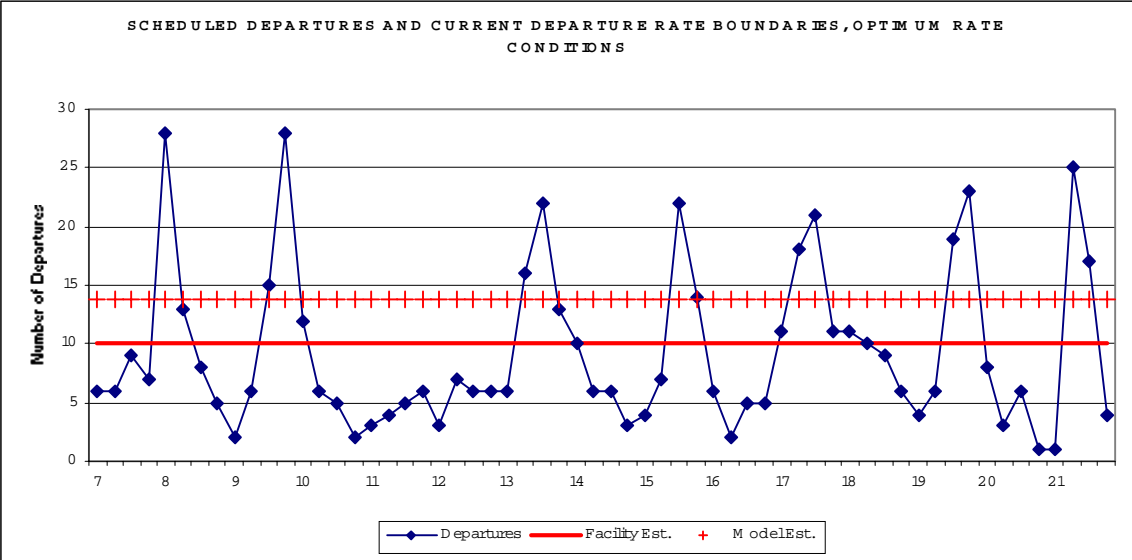
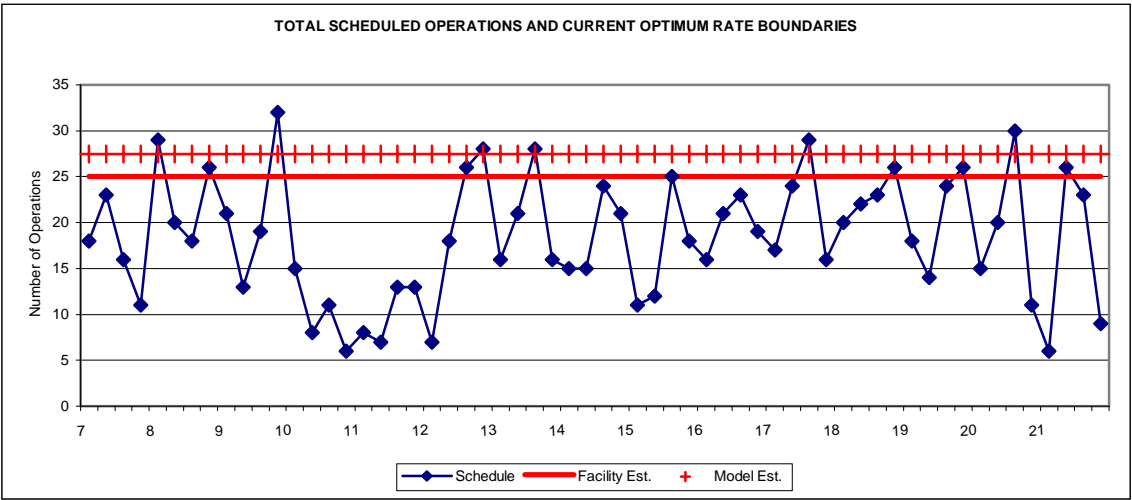
The list of Planned Improvements and their expected effects on capacity does not imply FAA commitment to or approval of any item on the list.

Current Operations – Optimum Rate

- Visual approaches, visual separation – Optimum Rate of (60,40) was reported by the facility
 - Arrive 27R/35/26, Depart 27L until turboprop demand is exhausted
 - Then, Arrive 27R/L, Depart 27L/35
- Assumed 25% of traffic can use Runways 17/35 and 8/26. If fewer aircraft can use these runways, the capacity of the airport decreases.
- ASPM data is actual hourly traffic counts for the month of April 2000 for Visual Approach conditions. This data includes other runway configurations and off-peak periods.
- Solid line represents the calculated airport capacity during a busy hour, and the tradeoff between arrivals and departure rates
- The capacity model can only approximate the complex operations at PHL

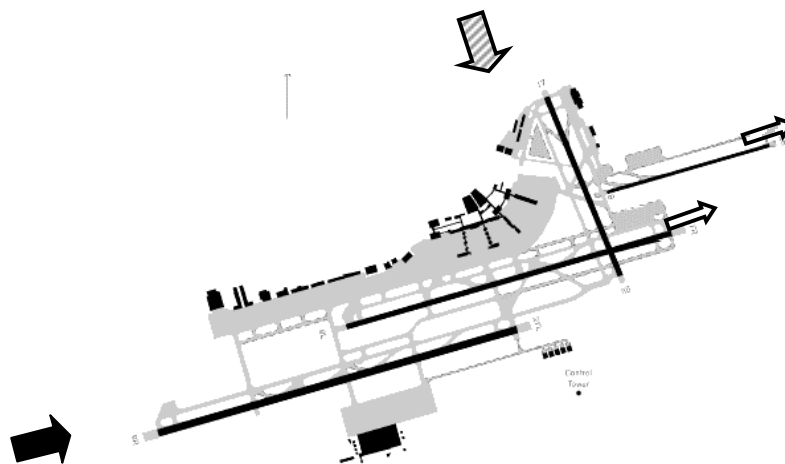
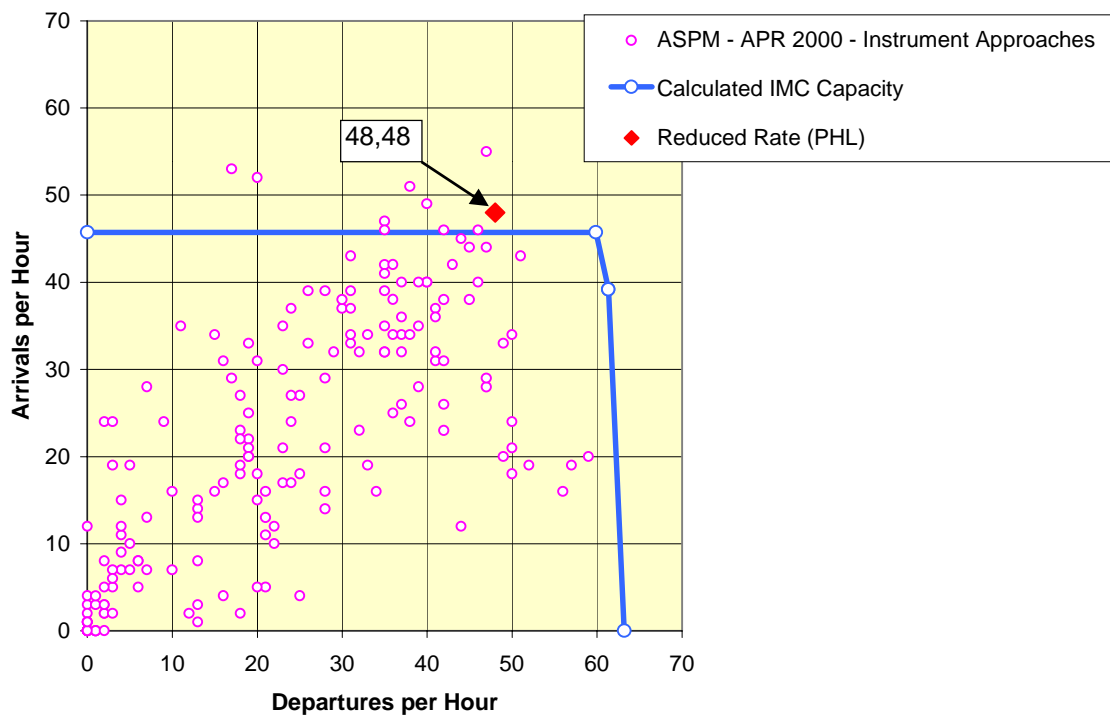


Scheduled Departures and Arrivals and Current Departure and Arrival Rate Boundaries (15-Minute Periods) Under Optimum Rate Conditions



Current Operations – Reduced Rate

- Instrument approaches (below Visual Approach Minima)
 - Arrive 9R/17, Depart 9L/8 (turboprops operate independently)
- Assumed 25% of traffic can use Runways 17/35 and 8/26. If fewer aircraft can use these runways, the capacity of the airport decreases.
- Reduced Rate of (48,48) was reported by the facility
- ASPM data for “Instrument Approaches” can include marginal VFR, with higher acceptance rates
- Chart below represents observed traffic and expected rates in terms of operations per hour



Scheduled Departures and Arrivals and Current Departure and Arrival Rate Boundaries (15-Minute Periods) Under Reduced Rate Conditions

